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REPORT

CD NO.

50X1-HUM

COUNTRY USSR

DATE OF
INFORMATION 1950

SUBJECT Economic - Tractor industry

HOW
PUBLISHED Monthly periodical

DATE DIST. 22 May 1950

WHERE
PUBLISHED USSR

NO. OF PAGES 2

DATE
PUBLISHED Feb 1950SUPPLEMENT TO
REPORT NO.

LANGUAGE Russian

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SOURCE Avtomobil'naya Promyshlennost', No 2, 1950.URGE IMPROVEMENTS IN USSR TRACTOR PRODUCTION

Considerable progress has been made lately in the manufacture of tractors. The DT-54 tractor, produced by the Kharkov and Stalingrad Tractor Plants, and the KD-35, produced by the Lipetsk Tractor Plant, are now produced with Diesel motors. The DT-54 consumes 30-34 percent less fuel than the ASKhTZ-NATI, which operates on kerosene.

The long service life of the DT-54 and ASKhTZ-NATI tractors has been achieved through a modernized side transmission, suspension springs for the carriage supported by rollers, the use of liquid in place of solid oil for greasing the idle wheels, and an original type of rubber packing which prevents leaking of grease and protects greased parts from dirt and dust. Moreover, the DT-54 has cylinders with sleeves that have been heat treated, an improved type of air cleaner, coarse and fine oil filters, and an oil cooler, while the ASKhTZ-NATI is equipped with an antiknock head which eliminates the need for flushing the cylinders with water.

The majority of tractors currently put out are DT-54 and ASKhTZ-NATI models; therefore, their improvement is a matter of Union-wide importance.

Both the new and old type tractors will soon be adapted for suspension-type agricultural machines which will be simpler and lighter than the trailer type and will consume less metal in manufacture. In addition, they will obviate the need for workers to couple the machines. All machine operation will be controlled by the tractor operator through automatic devices. The maneuverability of suspension-type machines is considerably greater than that of the trailer type.

Operation of suspension-type machines differ considerably from that of trailers. In the case of wheel tractors, there is a greater load on the rear axle and a more pronounced tendency for the frame and other parts to bend or break. Therefore, measures must be found to prevent breakage or premature wear-out.

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Designers must take into account the increasing variety of operations performed by tractors. General-purpose tractors are now used for reclamation and forestation projects. Reclamation operations require less pressure on the soil and forestation lower speeds than those for which the tractors are designed. On steep inclines, the tractors often run into difficulties. These inadequacies must be eliminated.

Gas-generator tractors must be designed on a larger scale and at an accelerated tempo. These must match other tractors both in horsepower and fuel consumption. NATI (Scientific-Research Automobile and Tractor Institute) has already designed a gas-generating mechanism for the ASKhTZ-NATI tractor which burns charcoal and semi-coke. Such installations must be devised also for wood, anthracite, and lignite.

There must be increased efforts toward economy in manufacture. The Lipetsk Tractor Plant must improve the thermodynamic qualities and mechanical efficiency of the Kirovets-35 tractor. Other plants and NATI must make a further study of the friction transmissions of the KD-35 and DT-54 under operating conditions.

It is necessary to increase the wear resistance of caterpillar tracks. The favorable results obtained on tracks with rubber and metal links must be tested further under operating conditions. Vigorous efforts must be made to increase the wear resistance of plunger couplings and pump springs, Diesel atomizers, and piston rings.

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